

# About the Corporation

## **QUICK FACTS:**

- ◆ **A leading supplier of enriched uranium fuel for commercial nuclear power plants**
- ◆ **2007 revenues of \$1.9 billion**
- ◆ **Demonstrating and deploying the American Centrifuge, USEC's next-generation uranium enrichment technology**
- ◆ **U.S. executive agent for the Megatons to Megawatts program, recycling nuclear warheads into electricity**
- ◆ **Began operation as a private-sector corporation July 28, 1998**
- ◆ **Listed on New York Stock Exchange under the symbol "USU"**

USEC Inc. (NYSE: USU), a global energy company, is a leading supplier of enriched uranium fuel for commercial nuclear power plants. Revenues in 2007 were \$1.9 billion. USEC headquarters are in Bethesda, Maryland.

Through its subsidiary, the United States Enrichment Corporation, USEC operates the only uranium enrichment facility in the United States: a gaseous diffusion plant in Paducah, Kentucky. Production of enriched uranium is a key step in producing nuclear fuel used by nuclear power plants worldwide to generate electricity.

USEC's facility in Piketon, Ohio, is hosting the Company's American Centrifuge Demonstration Facility and construction has officially begun on the future American Centrifuge Plant. American Centrifuge is USEC's next-generation uranium enrichment technology. It is based on U.S. centrifuge technology, a proven, workable technology developed by the U.S. Department of Energy (DOE) from 1960 through the mid-1980s. USEC is operating the Demonstration Facility for the purposes of demonstrating and evaluating the Company's enhancements to U.S. centrifuge technology and centrifuge performance in a cascade configuration. The Lead Cascade test program began operating in the Demonstration Facility in late August 2007. USEC employees in Oak Ridge, Tennessee, are involved in the design, development, manufacturing and testing of centrifuge machines.

USEC is the U.S. government's executive agent for the Megatons to Megawatts program, a 20-year, \$8 billion, commercially funded nuclear nonproliferation initiative of the U.S. and Russian governments. This unique program is recycling 500 metric tons of weapons-grade uranium taken from dismantled Russian nuclear warheads (the equivalent of 20,000 warheads) into low enriched uranium used by USEC's customers to generate electricity.

Uranium enrichment for commercial nuclear reactors began in the 1960s, when the U.S. government shifted some of its enrichment capacity from military to civilian use. In the early 1990s, USEC was created as a government corporation in order to restructure the government's uranium enrichment operation and prepare it for sale to the private sector. USEC's privatization was completed on July 28, 1998.

USEC's subsidiary NAC International is a leading provider of transportation and storage systems for used nuclear fuel and energy consulting services.

As an investor-owned company, USEC continues a 30-year tradition of reliability: all customer shipments have been made on time and within specification.

# About the Board of Directors

**USEC Inc. is governed by a 10-member Board of Directors.**

## **USEC Directors**

- ◆ **James R. Mellor**  
Chairman
- ◆ **Michael H. Armacost**
- ◆ **Joyce F. Brown**
- ◆ **Joseph T. Doyle**
- ◆ **H. William Habermeyer**
- ◆ **John R. Hall**
- ◆ **William J. Madia**
- ◆ **W. Henson Moore**
- ◆ **Joseph F. Paquette, Jr.**
- ◆ **John K. Welch**

**James R. Mellor**, chairman of the board of directors, retired in 1997 as chairman and CEO of General Dynamics Corporation, a position he held since 1994. Prior to assuming that position, Mr. Mellor was president and COO previously president and COO of General Dynamics. Mr. Mellor served as interim president and CEO of USEC from December 2004 to October 2005. He also serves on the board of trustees of the Scripps Research Institute and the board of directors of IDT Corporation.

**Michael H. Armacost** is a Walter H. Shorenstein distinguished fellow and visiting professor in the Asia/Pacific Research Center at Stanford University. Mr. Armacost served as president and trustee of The Brookings Institution from 1995 to 2002. He served as undersecretary of state for political affairs from 1984 to 1989, as U.S. ambassador to Japan from 1989 to 1993 and as U.S. ambassador to the Philippines from 1982 to 1984. He also serves on the boards of directors of AFLAC Inc. and Applied Materials Inc.

**Joyce F. Brown** is president of the Fashion Institute of Technology of the State University of New York, a position she has held since 1998. From 1994 to 1997, Dr. Brown was a professor of clinical psychology at the City University of New York, where she previously held several vice chancellor positions. From 1993 to 1994, she served as the deputy mayor for public and community affairs in the Office of the Mayor of the City of New York. Dr. Brown also serves on the boards of directors of Polo Ralph Lauren Corporation and Linens 'n Things, Inc.

**Joseph T. Doyle** is a consultant and a director of several for-profit companies and not-for-profit organizations. From July 2002 through March 2003, he served as senior vice president and chief financial officer of Foster Wheeler, Inc. Prior to joining Foster Wheeler, Mr. Doyle was executive vice president and chief financial officer of U.S. Office Products from 1998 through 2001, chief financial officer of Westinghouse Electric Company's Industrial Group from 1996 through 1998 and chief financial officer of Allison Engine Company (now Rolls Royce Allison) from 1994 to 1996.

**H. William Habermeyer** retired in 2006 as president and CEO of Progress Energy Florida, a subsidiary of Progress Energy Inc. Mr. Habermeyer joined Progress Energy predecessor Carolina Power & Light in 1993 and served as vice president of nuclear services and environmental support, vice president of nuclear engineering and vice president of the western region of North Carolina before assuming the role of president and CEO of Progress Energy Florida in 2000. Prior to that, Mr. Habermeyer had a 28-year career in the U.S. Navy, retiring as a rear admiral. He also serves on the board of directors of Raymond James Financial Inc. and Southern Company.

# Board of Directors

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**John R. Hall** retired in 1997 as chairman of the board of directors of Ashland, Inc., a position he held since 1981. Mr. Hall also was CEO of Ashland, Inc. from 1981 to 1996. He was chairman of the board of directors of Arch Coal, Inc. from 1997 to 1998 and a director until 1999. Mr. Hall also serves on the board of directors of GrafTech International Ltd.

**William J. Madia** is a vice president at Stanford University for oversight of the Stanford Linear Accelerator Center, a U.S. Department of Energy national science lab. Dr. Madia retired in 2007 as executive vice president of laboratory operations of the Battelle Memorial Institute, where he oversaw the management or co-management of six DOE national laboratories. Dr. Madia served in that position since 1999 and prior to assuming that role, he managed Battelle's global environment business, served as president of Battelle Technology International, director of Battelle's Columbus Laboratories and corporate vice president and general manager of Battelle's Project Management Division.

**W. Henson Moore** was president and CEO of the American Forest & Paper Association from 1995 to 2006. He was also president of the International Council of Forest Product Associations from 2002 to 2004. Mr. Moore was previously deputy secretary of energy from 1989 to 1992 and in 1992 became deputy chief of staff for President George Bush. From 1975 to 1987, he represented the Sixth Congressional District of Louisiana in the U.S. House of Representatives. Mr. Moore also serves on the board of directors of Domtar Corporation.

**Joseph F. Paquette, Jr.** retired in 1997 as chairman and CEO of PECO Energy Company, a position he held since 1988. Before that, Mr. Paquette held positions with Consumers Power Company as president, and senior vice president and chief financial officer, and with Philadelphia Electric Company as chief financial officer. He also serves on the board of directors of CMS Energy Corp.

**John K. Welch** has been president and CEO of USEC Inc. since October 2005. Prior to joining USEC, he served as a consultant to several government and corporate entities. He executive vice president and group executive, Marine Systems at General Dynamics from March 2002 to March 2003 and senior vice president and group executive, Marine Systems from January 2000 to March 2002. Prior to that, Mr. Welch held several executive positions over a ten-year period at General Dynamics' Electric Boat Corporation, including president from 1995 to 2000. Mr. Welch currently serves on the boards of Battelle Memorial Institute, the U.S. Naval Academy Foundation and Precision Custom Components Inc.

# Biography: John K. Welch

## President and Chief Executive Officer



**John K. Welch** is president and chief executive officer of USEC Inc. Mr. Welch joined USEC in October 2005. He also serves on the Company's board of directors.

Mr. Welch previously served as executive vice president of the Marine Systems Group at General Dynamics, where he oversaw all operational aspects of four business units, including Electric Boat and Bath Iron Works. Prior to that, he held several executive positions over a 10-year period at Electric Boat, including five years as president. He most recently served as a consultant to several government and corporate entities in the areas of technology development and commercialization, program management, business process reengineering and strategic planning.

Mr. Welch began his career as a submarine officer in the U.S. Navy. He went on to hold management positions with Advanced Technology, Inc. and General Physics Corporation before joining General Dynamics in 1989.

Mr. Welch currently serves on the boards of Battelle Memorial Institute, the U.S. Naval Academy Foundation, the Nuclear Energy Institute (NEI) and the American Council on Global Nuclear Competitiveness.

Mr. Welch received a master's in business administration from Loyola College in Maryland, a master of science in aeronautical engineering from the Naval Postgraduate School in California, and a bachelor of science in aerospace engineering from the U.S. Naval Academy. He is a registered professional engineer in the state of Maryland.

USEC Inc. (NYSE: USU), a global energy company, is a leading supplier of enriched uranium fuel for commercial nuclear power plants.

# About USEC's Production Facilities

## **QUICK FACTS:**

- ◆ **Paducah, Kentucky, plant is nation's only uranium enrichment facility**
- ◆ **At Paducah plant, uranium is enriched from less than 1% U-235 to 4% - 5% U-235 for use as fuel in nuclear power plants to produce electricity**
- ◆ **Construction has begun on the Piketon, Ohio, facility hosting USEC's American Centrifuge Plant, featuring next-generation uranium enrichment technology**
- ◆ **In 1993, USEC took over management of Paducah and Piketon gaseous diffusion plants from the U.S. government**
- ◆ **Regulated by the U.S. Nuclear Regulatory Commission**

USEC Inc., through its subsidiary, the United States Enrichment Corporation, operates the only uranium enrichment facility in the United States: a gaseous diffusion plant in Paducah, Kentucky. Uranium enrichment is a key step in the production of nuclear fuel, used by nuclear power plants around the world to generate electricity.

At the Paducah plant, natural uranium is enriched from less than 1% of the fissionable isotope U-235 to 4%-5% U-235, which is the level required for nuclear power plants to produce electricity. The enriched uranium is then sampled, transferred to customer cylinders and prepared for shipping to fuel fabricators for ultimate delivery to power plant operators.

In 1993, USEC took over management of the Paducah plant and its sister plant in Piketon, Ohio, from the U.S. government. Both plants are regulated by the U.S. Nuclear Regulatory Commission.

**Paducah, Kentucky.** The Paducah plant began production of enriched uranium in 1952 and operated almost exclusively for national defense purposes until the 1960s, when the government shifted some of its enrichment capacity from military to civilian use. The plant has a fenced area of about 750 acres, 74 of which contain process buildings under roof that include nearly 1,800 enrichment stages. The plant has a design capacity of approximately 11 million separative work units (SWU) per year. SWU is the standard industry term for measuring uranium enrichment.

**Piketon, Ohio.** The Portsmouth Gaseous Diffusion Plant in Piketon began enrichment operations in 1954. In the 1960s, some capacity was shifted from military to civilian use. In May 2001, USEC ended enrichment operations in Piketon. Today, Piketon employees support USEC's operational and administrative functions, and perform contract work for DOE. Piketon is hosting the Company's American Centrifuge Demonstration Facility and construction has officially begun on the American Centrifuge Plant.



# Uranium Enrichment: How It's Done

## Commercial Nuclear Fuel Cycle

### 1. Mining

*Uranium ore is mined from the earth.*

### 2. Milling

*Uranium ore is processed to produce a form of uranium known as "yellowcake."*

### 3. Conversion

*Yellowcake is converted to uranium hexafluoride.*

### 4. Enrichment

*This step increases the concentration of the isotope U-235 from its naturally occurring level of 0.7% to higher levels required for nuclear reactors – about 4%-5%.*

### 5. Fabrication

*Enriched uranium is converted into uranium dioxide, formed into solid cylindrical pellets, sealed in metal fuel rods and bundled into fuel assemblies.*

### 6. Power Production

*Fuel assemblies are loaded into nuclear reactors where the U-235 fissions, producing heat and steam used to generate electricity.*

Uranium enrichment is a critical step in transforming natural uranium into nuclear fuel to produce electricity. Uranium is a naturally occurring element containing U-235 and U-238 isotopes. Only the U-235 isotope is fissionable. Enrichment is the process of increasing the concentration of U-235 and decreasing that of U-238.

Natural uranium contains about 0.7% U-235. But the fuel assemblies that power a commercial nuclear reactor at an electric utility generally need uranium with a 4% to 5% concentration of U-235. To produce this fuel, USEC increases, or enriches, the concentration of U-235 in natural uranium hexafluoride (UF<sub>6</sub>) to the appropriate level and sells the fuel to its utility customers.

Uranium enrichment is sold as separative work units (SWU), which represent the level of effort required to increase the concentration of U-235 in natural uranium. Higher levels of U-235 require more SWU.

Commercial uranium enrichment currently employs one of two technologies: gaseous diffusion or gas centrifuge. Both use UF<sub>6</sub> as the chemical form of uranium for processing, in part because UF<sub>6</sub> readily becomes a gas when heated. Both rely on the mass differences between U-235 and U-238 to achieve separation, either through a semiporous membrane (diffusion) or by spinning at high speed (centrifuge). At its Paducah, Kentucky, plant, USEC uses the gaseous diffusion method for enriching uranium.

USEC is in the process of demonstrating its next-generation American Centrifuge uranium enrichment technology. USEC is operating a Demonstration Facility in Piketon, Ohio, for the purposes of demonstrating and evaluating the Company's enhancements to U.S. centrifuge technology and centrifuge performance in a cascade configuration. The Lead Cascade test program began operating in the Demonstration Facility in late August 2007.

USEC is working toward beginning commercial plant operations in late 2009 and having approximately 11,500 machines deployed in 2012, which would provide about 3.8 million SWU of production based on current estimates of machine output and plant availability.

# Uranium Enrichment Market

## **QUICK FACTS:**

- ◆ **Nuclear energy generates approximately 16% of the world's electric power**
- ◆ **30 nations rely on nuclear energy to supply a portion of their electricity**
- ◆ **The U.S. government began enriching uranium in the 1940s**
- ◆ **The commercial nuclear industry began in the 1960s**
- ◆ **USEC is a leading supplier of enriched uranium fuel for commercial nuclear power plants**

Uranium enrichment is a multi-billion dollar international industry that represents a vital step in the production of fuel for commercial nuclear power plants.

Nuclear energy accounts for approximately 16 percent of the world's electric power production. There are more than 435 nuclear power reactors worldwide, most of which use enriched uranium for fuel, 104 of which generate 20 percent of America's electrical power. Operating nuclear power reactors have a generating capacity of more than 370,000 megawatts of electric power.

Thirty nations rely on nuclear energy for a portion of their electricity supply. Sixteen countries derive at least a quarter of their electricity from nuclear power and France and Lithuania get more than three-quarters. In Belgium, Sweden, South Korea, Slovakia, Slovenia and Ukraine, nuclear provides at least 40 percent of the electricity.

There are signs of growing momentum toward a renaissance in the nuclear power industry worldwide: 35 reactors are under construction in 12 countries, China and India have aggressive plans to build new nuclear generating capacity, and new plants are being constructed in Finland and Japan. In the United States, more than a dozen utilities are taking preliminary steps towards building the country's first new nuclear reactors in 30 years. These utilities, alone or in partnerships, have announced tentative plans to potentially build new reactors at various sites across the country.

The U.S. government began to enrich uranium in the 1940s. The government's gaseous diffusion plants in Paducah, Kentucky, and Piketon, Ohio, began operating in the 1950s to supply enriched uranium for U.S. nuclear weapons and later for nuclear-powered submarines. In the 1960s, all phases of the nuclear fuel cycle in the United States—except uranium enrichment—became privately owned, thus marking the beginning of the commercial nuclear power industry.

In July 1998, the privatization of USEC Inc. was completed. Today, USEC is a leading supplier of enriched uranium fuel for commercial nuclear power plants.

# American Centrifuge Program

*Fueling the Future*



- **The American Centrifuge Plant is expected to play a major role in supporting America's energy security and national security interests, while providing a reliable, competitive fuel source for the world's nuclear power plants**
- **USEC anticipates the American Centrifuge will be the world's most efficient uranium enrichment technology**
- **USEC is working toward beginning commercial plant operations in late 2009**

USEC Inc. is demonstrating and plans to deploy the American Centrifuge technology to replace the gaseous diffusion process used at its Paducah Gaseous Diffusion Plant to enrich uranium for use in nuclear power reactors. USEC's American Centrifuge technology is based on U.S. centrifuge technology originally developed by DOE from 1960 through the mid-1980s, but with significant improvements in efficiency through the use of modern materials, control systems and manufacturing processes.

Currently, demonstration and manufacturing activities are underway at centrifuge test facilities located in Oak Ridge, Tennessee. USEC began testing individual prototype machines in highly specialized test equipment in January 2005 and began manufacturing centrifuge components in April 2005.

In 2006, the USEC project team at Oak Ridge tested a centrifuge machine that demonstrated performance of about 350 SWU per machine, per year. This performance level has been reaffirmed in subsequent testing. USEC's project team will continue to optimize the performance of the centrifuge machines and conduct value engineering demonstrations.

In Piketon, Ohio, USEC is operating the Demonstration Facility for the purposes of demonstrating and evaluating the Company's enhancements to U.S. centrifuge technology and centrifuge performance in a cascade configuration. The Lead Cascade test program began operating in late August 2007. Tests have demonstrated the capability of the American Centrifuge technology to produce low enriched uranium at commercial product assay levels. The initial design for the AC100 centrifuge machine was finalized March 31, 2008, and 75 percent of the drawings have been released to USEC's strategic suppliers to begin manufacturing components.

USEC submitted its license application to the NRC to build and operate the American Centrifuge Plant (ACP) in 2004. The NRC Construction and Operating License was issued in April 2007. The license, which is good for 30 years, includes authorization to enrich uranium up to an assay level of 10 percent U-235. USEC officially began construction on the American Centrifuge Plant in May 2007. USEC is working toward beginning commercial plant operations in late 2009 and having approximately 11,500 machines deployed in 2012, which would provide about 3.8 million SWU of production based on current estimates of machine output and plant availability. As part of USEC's review of ACP costs, USEC is also looking at the ACP deployment schedule.

The successful construction and operation of the American Centrifuge Plant is dependent upon a number of factors, including the success and timing of the demonstration and deployment of the American Centrifuge technology and the costs to develop that technology; financing; and the achievement of milestones under the DOE-USEC Agreement.

Find out more at [www.americancentrifuge.com](http://www.americancentrifuge.com)



# Megatons to Megawatts™

*Recycling Nuclear Warheads into Electricity*



## **QUICK FACTS:**

- ◆ **20-year, \$8 billion, commercially funded program to recycle the equivalent of 20,000 Russian nuclear warheads into low enriched uranium for use in fabricating nuclear fuel**
- ◆ **USEC subsidiary is U.S. executive agent; TENEX serves for Russia**
- ◆ **The first shipment of uranium derived from Russian warheads arrived in the United States in June 1995**
- ◆ **Milestone of 13,000 warheads eliminated was achieved in March 2008**
- ◆ **Implementation of the agreement is ahead of the original schedule**
- ◆ **About 10 percent of the United States' electricity is generated using this uranium**

USEC Inc.'s subsidiary, United States Enrichment Corporation, is the U.S. government's executive agent responsible for implementing the historic 1993 government-to-government agreement between the United States and the Russian Federation. The agreement calls for Russia to convert 500 metric tons of highly enriched uranium (HEU) taken from dismantled nuclear warheads into low enriched uranium (LEU) to be used by commercial nuclear power plants to generate electricity.

To implement the agreement, in 1994 USEC's federal predecessor entered into a 20-year commercial contract with Technobexport (TENEX), executive agent for Russia. Over a period of 20 years, 500 metric tons of HEU is being diluted in Russia to about 15,000 metric tons of LEU, which cannot be used for weapons. This LEU is then shipped to USEC facilities in Paducah, Kentucky. Under terms of the contract, United States Enrichment Corporation purchases the enrichment portion of the blended-down material. USEC's electric utility customers use the uranium in fabricating fuel for their commercial nuclear power plants. About 10 percent of the country's electricity is generated using this LEU. The program is operated at no cost to taxpayers.

The total cost of the enrichment portion of the contract is about \$8 billion. As required by the 1996 USEC Privatization Act, USEC's subsidiary transfers the natural uranium component of the LEU (worth about \$4 billion) to TENEX for Russian disposition. The first shipment of LEU derived from Russian weapons-grade HEU arrived in the United States in June 1995.

In June 2002, the U.S. and Russian governments approved implementation of a contract amendment for the remaining 12 years of the program. The amendment introduced new, market-based pricing terms that went into effect in January 2003.

As of March 31, 2008, material equivalent to 13,093 nuclear warheads had been downblended into LEU—enough to power the entire country for more than a year.

**Find out more at [www.megatonstomegawatts.com](http://www.megatonstomegawatts.com)**

# About NAC International

## **QUICK FACTS:**

- ◆ **Wholly owned subsidiary of USEC Inc.**
- ◆ **Provides nuclear utilities with essential used fuel transportation and storage technologies**
- ◆ **Has the largest commercial fleet of used fuel transportation casks in the United States**
- ◆ **Submitted application to NRC for approval of advanced MAGNASTOR™ used fuel storage system in August 2007**
- ◆ **Manages the Nuclear Materials Management and Safeguards System (NMMSS) for the U.S. government**
- ◆ **Serves as leading nuclear fuel cycle consultant**

Established in 1968, NAC International is a wholly owned subsidiary of USEC Inc. USEC purchased NAC from Pinnacle West Capital Corp. in November 2004.

NAC is a leading provider of transportation and storage systems for used nuclear fuel and offers a wide range of nuclear and energy consulting services. NAC also provides a variety of services for the U.S. government related to the tracking of nuclear materials. NAC is headquartered in Norcross, Georgia.

**Used Fuel Solutions:** NAC provides nuclear utilities with essential used fuel management systems, such as the NAC-MPC, NAC-UMS and NAC-STC transportation and storage technologies. NAC has the largest commercial fleet of used fuel transportation casks in the United States. In August 2007, the company submitted an application to the U.S. Nuclear Regulatory Commission for approval of its new MAGNASTOR™ system, which is expected to offer market-leading fuel capacity and operational features.

**Used Fuel Transportation:** NAC has provided a significant share of all U.S. used fuel transportation over the past 15 years, including shipments under the U.S. Department of Energy's nonproliferation program to return foreign research reactor fuel to the United States.

**Nuclear Materials Tracking:** NAC manages the Nuclear Materials Management and Safeguards System (NMMSS), a U.S. government database that tracks the use and shipment of nuclear materials.

**Fuel Cycle Consulting:** Led by a team of internationally recognized fuel cycle experts, NAC has served as the industry's leading nuclear fuel cycle consultant for over 30 years. It offers a wide range of services including market research and analysis, price forecasts and nuclear fuel design review and performance assessment.

Find out more at [www.nacintl.com](http://www.nacintl.com)